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FACT SHEET



UNITED STATES
DEPARTMENT
OF AGRICULTURE

ENERGY CONSERVATION IN THE RURAL HOME

Why Weatherize Your Home?

Using more fuel than you need to is bad for your pocket book and a drain on energy resources as well. For most households, \$4000 invested in weatherization would pay for itself through fuel savings within 5 years. In fact, if 95 percent of all homes were adequately insulated, the energy used for heating the nation's homes would go down by one-third.

You can see to it that less heat is wasted through the walls, ceilings, floors, windows, and doors of your home. You can do it by weatherizing your home with insulation, caulking, weatherstripping, storm doors, and windows.

Insulation will probably be the biggest part of your

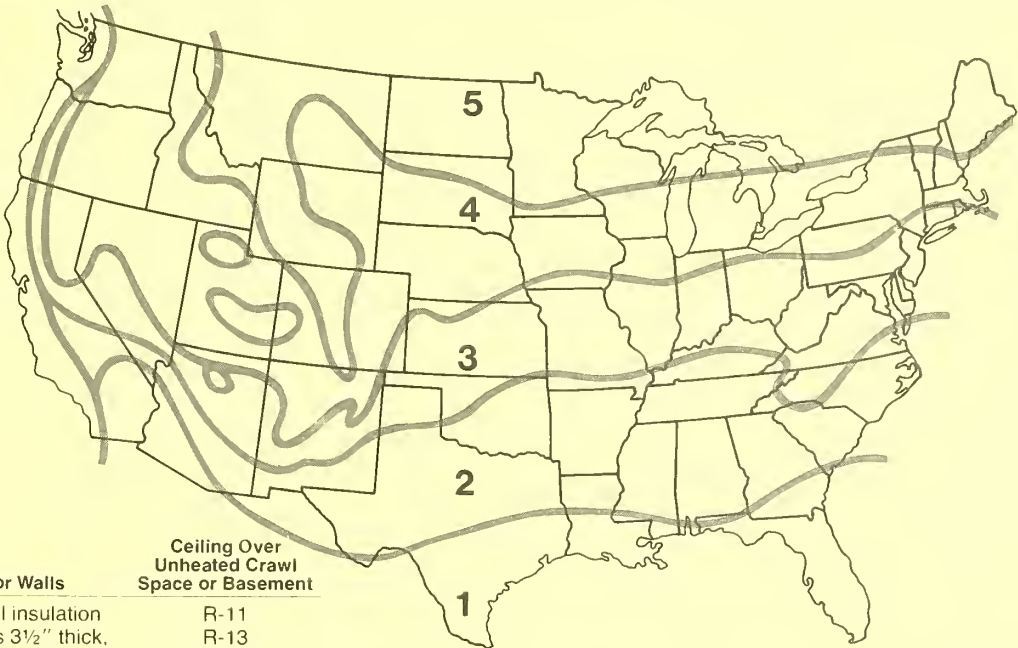
weatherization project. Most homes are seriously under-insulated. To determine if yours is, find the approximate R value of the insulated areas you have (see map). The R values for any home are fixed for your climatic zone and area. Probably you will have to add additional insulation to bring your home up to the recommended R value level.

The R value measures the resistance to heat flow. It also rates the insulating value of building materials. Each kind of construction material, together with the dead air space between layers, has a heat loss rate listed in terms of an R value. The larger the R value, the lower the heat loss.

Other things also influence the rate of heat loss: temperature differences between the inside and the outside of the house, the kind of exterior surface, and the strength of prevailing winds. Winds seriously affect the heat loss as they enter through cracks and force warm air out. Wind problems are best corrected with weatherstripping, caulking, new siding, and exterior tree and shrub plantings or fencing to divert prevailing winds.

Exhaust fans, open fireplaces, and furnaces may increase air losses through their vents or flues. Excessive opening of doors and windows also can bring unwanted

**Climatic Zones Map
for Determining
Insulation Needs**



Heating Zone	Attic Floors	Exterior Walls	Ceiling Over Unheated Crawl Space or Basement
1	R-26	Full wall insulation which is 3½" thick, is approximately R-14	R-11
2	R-26		R-13
3	R-30		R-19
4	R-33		R-22
5	R-38		R-22

outside temperatures in and make your home uncomfortable.

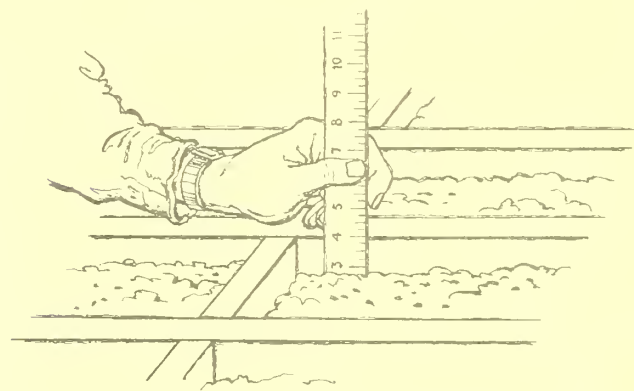
In cold weather, open outside doors only when necessary. Close off unused rooms. Set the thermostat at 65° F. Use efficient heating equipment and maintain it properly. Look at the way your home is landscaped. Could plantings protect your home against the weather? Finally, with an eye to the future, find out if any solar energy devices are practical for use in your home.

Unevenly heated rooms that are chilly around doors and windows, and drafty upstairs rooms are sure signs that your home needs to be weatherized to save heat. When your home is uncomfortable you are prompted to set the thermostat higher, and this adds to heat loss and your heating bills.

What you can save in fuel bills over several years may cover the cost of adding storm doors and windows. Covering doors and windows with plastic sheeting or other materials is inexpensive, although less effective than storm doors and windows. Draperies, especially those with reflective liners that block cold radiated through windows, help too.

If your outside walls have no insulation, the walls will be cool even after caulking, weatherstripping, and adding storm doors and windows. In most parts of the country, it pays to insulate uninsulated or poorly insulated walls.

Check your attic to find out how well it is insulated. Older homes may have little or no attic insulation, and most newer homes do not have enough. Insulating your attic properly can save you as much as one-third on fuel costs. In 3 to 5 years you could recover the cost of the insulation. Perhaps you can insulate your attic yourself; if you pay someone to do it, the cost may be 3 to 5 times as great.



If you already have some insulation in your attic, measure its depth to determine how much more is needed to reach the recommended R value for your area (see table of R values). If the costs of fuels increase as much as expected in the future, your investment in additional attic insulation will be sound.

Next, check the insulation in your basement or crawl space, around heating ducts and your water heater, the condition of your heating and cooling system, and your landscaping.

If you are going to build a new home, locate the home to reduce heat loss and take advantage of solar heating in the winter and/or natural cooling in the summer.

Compare your fuel use with that of others who use the same fuel and have homes of comparable size, but with extra weather protection. If your fuel-use habits are similar, this cross-check will help you evaluate your own home weatherization.

Remember that the R value calculated for the exterior walls, windows, doors, ceilings, and floors of your home is meaningful only as it relates to the average weather heating data for your area. Heating data can be summarized in terms of degree-days (the yearly summation of the degrees that the average temperature for each day fell below 65° F). Example: 5,000 degree heating days occur in a zone that extends from northern Nebraska through southern Iowa, northern Indiana, and to central Pennsylvania.

You can get help to estimate your weatherization needs. Check with your county extension agents, your energy supplier, or your local Farmers Home Administration office.

This fact sheet, plus others listed below, was developed to help you. Agencies such as the Department of Energy, Department of Housing and Urban Development, Consumer Product Safety Commission, and the Department of Commerce also publish material on weatherization.

Fact Sheets In The Home Weatherization Series

1. Why Weatherize Your Home?
2. How To Determine Your Insulation Needs
3. Saving Heating and Cooling Dollars With Weatherstripping And Caulking
4. How To Save Money With Storm Doors And Windows
5. What To Look For In Selecting Insulation
6. How To Install Insulation For Ceilings
7. How To Install Insulation For Walls
8. How To Install Insulation For The Floor And Basement
9. Solving Moisture Problems With Vapor Barriers And Ventilation
10. Weatherize Your Mobile Home To Keep Costs Down, Comfort Up
11. Tips On Financing Home Weatherization
12. Keeping Home Heating And Cooling Equipment In Top Shape
13. Landscaping To Cut Fuel Costs
14. Home Management Tips To Cut Heating And Cooling Costs
15. Locating New Home Sites To Save Fuel

Single copies are available upon request to Special Reports Division, Office of Governmental and Public Affairs, U.S. Department of Agriculture, Washington, D.C. 20250.

This series of fact sheets was assembled from research, Extension, and other sources by the USDA Task Force on Weatherization.